Ümit Özgür, Ph.D.

Engineering Foundation Professor, Department of Electrical and Computer Engineering at VCU College of Engineering

Engineering West Hall, Room 340, Richmond, VA, US

Professor Özgür specializes in optical spectroscopy and photonic devices

Biography

Dr. Özgür received his Ph.D. from Duke University in 2003 and worked at VCU as a postdoctoral research associate from 2003 to 2008 and as an instructor from 2007-2008. He joined VCU Electrical and Computer Engineering Department as an Assistant Professor in 2008. His primary experience is in optical characterization of dielectric and semiconductor materials and devices. He has been responsible for many contributions to the understanding of ultrafast carrier dynamics in nitride heterostructures, including generation and control of terahertz coherent phonons in nitride multiple quantum wells, and mechanisms limiting GaN-based LED efficiencies at high injection levels. His efforts also helped produce high quality GaN thin films with low dislocation densities and the best known carrier lifetimes. He has authored 1 book, 4 book chapters, and over 120 journal publications, contributed to more than 100 conference proceedings and presentations, and given 6 invited talks on growth, fabrication, characterization, and electronic and optoelectronic applications of semiconductor heterostructures, nanostructures, and devices. He has served as a principal investigator and co-principal investigator for several NSF, DoD, VCU, and industry funded projects. His current research focuses on ultrafast optical spectroscopy of semiconductor heterostructures and nanostructures, light emitting diodes for general lighting, zinc oxide electronics, perovskite solar cells, nanostructured biosensors, and pixel scale narrow bandpass filters for infrared spectroscopy. Dr. Özgür teaches courses on electromagnetic fields, electronic devices, microwave engineering, nonlinear optical materials and devices, and semiconductor optoelectronics and serves as the Graduate Program Director in the Electrical and Computer Engineering Department. He is a senior member of IEEE, member of APS, and member of SPIE.

Industry Expertise

Research, Education/Learning

Areas of Expertise

Ultrafast spectroscopy, Group III-nitride and zinc oxide optoelectronics, Light emitting diodes, III-V and II-VI semiconductor heterostructures, Nonlinear optics, Physics of semiconductor heterostructures

Education

Duke University
Ph.D. Physics

Duke University
M.A. Physics

Bogazici University
B.S. Physics

Bogazici University
B.S. Electrical Engineering
